4.8 CONSTRUCTION IMPACTS

4.8.1 Construction Noise

Noise generated by construction equipment would vary greatly, depending on the equipment type and model, mode, and duration of operation, and specific type of work in progress. Typical sound levels at 15 m (50 feet) would be in the 67 to 105 dBA range. See Table 4.8.1-1, "Construction Equipment Noise Levels," for typical construction equipment sound levels for various equipment types.

Table 4.8.1-1

Construction Equipment Noise Levels

Construction Equipment	Sound Level at 15m (50 ft.) dBA
Air Compressor–Quiet > 500 cfm	73
Air Compressor–Standard > 500 cfm	87
Back Hoe/Loader	81
Back-up Alarms	Variable (typically 5-10 dBA above ambient at equipment site)
Concrete Mixer Truck	80-85
Concrete Pumper	70
Concrete Virators	77
Cranes–Mobile	81
Dump Truck	80-83
Generator	82
Hammering	86 (max)
Jackhammer	88
Pile Driver	100 (max)
Radial Arm Saw	80

It is important to note that construction sound levels refer to instantaneous maximum sound levels, as opposed to hourly average sound levels used to describe traffic noise. The loudest construction sound levels would occur during operations such as pile driving or breaking concrete. Adverse impacts resulting from construction noise are anticipated to be localized, temporary, and transitory.

To reduce the potential impact of construction noise, WisDOT Standard Specifications 107.8(6) and 108.7.1 will apply.

4.8.2 Construction Air Impacts

While construction equipment will have some minimal effects to CO concentrations, the predominant air quality impact will be dust arising form construction activities. Therefore, dust control during any future construction will be performed in accordance with WisDOT's *Standard Specifications for Road and Bridge Construction* that requires application of water or approved dust control measures during grading operations and on haul roads. The location and operation of concrete batch plants would be in accordance with the *Standard Specifications* and any special provisions developed during coordination with the WDNR regarding air quality standards and emissions.
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4.8.3 Construction Materials

A. Raw Materials

Requirements of raw materials for roadway construction vary depending on the alternative. The number of cubic feet (meters) required during construction will be determined at the time of final design. Since acquisition of road building materials is a factor of supply and demand in the private market, the stare does not control the contractor's selection or use of specific pits on specific properties. Cost and availability, in addition to the typical haul distance and equipment usage will be factors influencing the location of the aggregate quarries.

B. Recycled Materials

During the planning and design phases of a project, WisDOT carefully plans and tries to avoid the creation of pollution and any other types of environmental degradation. Geometric standards, construction standards, specifications, project sizing and facility locations are all reviewed to minimize waste materials and capitalize on the reuse of materials. WisDOT regularly recycles demolition debris and incorporates the recycled products back into the project as base course, new pavements, rip rap for stream banks, and other uses. In highway projects, pollution prevention automatically occurs as a result of the cost reduction efforts of WisDOT. Asphalt pavements are recycled and used in new asphalt pavements, roadway shoulders, base courses, and other road repair. Recycled concrete pavements are used in new concrete, base courses, and as rip rap for shoreline and stream bank stabilization.

WisDOT, while recycling many roadway materials, has limited opportunities to use old ties in roadway construction. However, WisDOT has used old ties in noise barrier berm construction and in a few instances, in pavement designs. The state of Wisconsin has a policy of incinerating used rubber tires and using them as an energy fuel source for power generation at power plants throughout the state. The state is mandated by State Law to eliminate all used rubber tire stockpiles. The state is committed to comply with this mandate and believes the policy of incineration for power generation to be environmentally safe and sound alternative use of recycled tires in constriction materials. This policy has been so successful that the state of Wisconsin has started incinerating used tires from neighboring states.

WisDOT also uses ash from coal incineration in highway construction. The EPA considers the use of recycled ash as a pollution prevention initiative. WisDOT uses fly ash in place of or in addition to Portland Cement in concrete, uses bottom ash as roadway embankment fill and as a chip seal aggregate on town road maintenance projects.

4.9 IMPACTS SUMMARY

Table 4.9-1 summarizes land requirements, direct impacts, relocations, and cultural and historic resources impacts for each build alternative carried forward for detailed study within each of the project segments. Estimated Dairyland Cooperative utility relocation costs and total construction costs are also presented for each alternative.